

MANUFACTURING EXTENSION PARTNERSHIP

Success Stories from the Field

Crafford Precision Products Company

Rhode Island Manufacturing Extension Services

Crafford-LaserStar Technologies: Getting Lean, Staying Competitive

Client Profile:

Crafford-LaserStar Technologies designs, manufactures, sells, and services two primary product lines: the LaserStar® pulsed laser systems, which are designed for a wide range of micro-welding and marking applications in the jewelry, dental lab, and industrial markets; and the Link-O-Matic® product line, designed for metal-wire linking applications, from jewelry and novelty items, to industrial components. The product lines are 100 percent manufactured in the Riverside, Rhode Island, facility, which employs 50 people. Crafford has sales and service locations in Rhode Island, Texas, California, Europe, and the Far East.

Situation:

As the only US company that develops, designs, and manufactures micro-welding laser workstations for the jewelry and dental industries, Crafford faced considerable competition from foreign imports from Germany and low-cost manufacturers in China, Japan, Taiwan, Korea, France, Russia, Czech Republic, Slovenia, Italy, and other former Soviet Bloc countries. Faced with this competition and the goal to grow the business at a significantly higher annualized rate, Crafford began to struggle with how to best manage the manufacturing growth, while increasing order volumes and requirements for higher levels of service. They knew that their key advantages over foreign competition, delivery speed, and outstanding customer service would be in jeopardy if they continued doing business as usual. Growth by simply adding layers of people meant more overhead and lower efficiency, and that just wasn't the smart way to respond. Crafford needed to change not only their processes and procedures; the company needed a true cultural change as well.

Crafford's Vice President of Engineering and Operations, David Braman, knew that external help would be needed to realize these changes. "I didn't want the type of consultants who come in, wave their magic wands, deliver a hefty bill, and leave us with little to show for it. While I was discussing my dilemma with one of our senior managers, he mentioned that he had met with an old acquaintance who now worked at the Rhode Island Manufacturing Extension Services (RIMES), a NIST MEP network affiliate. He wasn't sure if RIMES could help, but had this person contact me. I was pleasantly surprised with RIMES' methods, professionalism, results-oriented approach, and cost effectiveness," said Braman. Crafford's relationship with RIMES had begun.

Solution:

Working with RIMES, Braman initially took the basic Lean Manufacturing classes (Lean 101, 5S, and Value Stream Mapping, or VSM). When he communicated the concepts to the President and the Executive Vice President, they immediately saw the potential benefits and agreed that this was the way to help make the necessary changes to their organization. It was decided to train everyone in the company on some aspect of Lean, whether it was Lean 101, VSM, or 5S. The President of the company also participated in the training classes. This kind of transformation needed support from the top; it needed to become a strategic objective for the company. The Lean training gave employees at

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all levels insight into the cultural changes they were working toward, and it gave them a set of tools to use to bring about those changes. After the first eight hours of training, they started to see some significant transformations. The staff's vocabulary changed as they absorbed the information from the Lean trainings and put it to work. They also started to see certain individuals stepping up to take active roles, questioning the way they did things and making suggestions for improving processes throughout the company. The employees felt and, in fact, were empowered to make changes. One of the first places Crafford experienced measurable results was in order entry and processing. RIMES helped Value Stream Map the process of getting orders from the outside sales force into their system. The staff put a lot of effort into creating the current state map, and it was a real eye-opener. Previously, each order took 75 minutes over the course of 18 days, and the process was full of steps that added no value and caused stress for everyone involved. Next, the staff presented the future state map, which they revised almost as soon as they had rolled it out. The third and final revision consolidated the process even further and shaved off even more time. In its final form, the order entry process took 45 minutes over 5 days and was far more accurate. Because there were significantly fewer fires and hold-ups for lack of a piece of data, the people performing these functions now felt much less stress. Another area where Crafford saw dramatic improvement was in the accounting department. At the end of each month, they had to wait about two weeks for a first draft of numbers--even longer for the final draft. As a result of Value Stream Mapping, they now have the first draft in only three days and final shortly thereafter. They are better able to see what went right and what went wrong and to more effectively manage cash flow and inventory levels. "The Value Stream Mapping process has been a very valuable tool for us, maybe the most important tool we've gained from RIMES," said Braman.

On the manufacturing floor, the company is seeing marked improvements. They Value Stream Mapped their entire manufacturing process and introduced Point of Use Storage (POUS) which, along with 5S, helped better organize work areas, remove unnecessary or low-usage items, and identify locations for all tools and materials. POUS and 5S reduced assembly time and improved quality by making just the right tools and materials readily accessible. Using Lean Manufacturing techniques, Crafford transitioned to small lot sizes, which had a great impact. They reduced work in progress (WIP) by 50 percent and reduced inventory by 10 percent, which equates to several hundred thousand dollars. They have also significantly reduced the area needed for the stock room and have dramatically reduced the handling of parts, both of which reduced time and space required to make product. The net result was that they took production lead times from two to three weeks down to four to five days. They now configure each order and are ready to ship product before final customer shipping documents are ready, quite a contrast from where they were a year ago when manufacturing was the bottleneck. Crafford's products are primarily configure-to-order, so to support that model and have manufacturing deliver that fast without ballooning inventory and WIP, and all using less space and producing better quality, it is really amazing. The ability to grow capacity without major capital expenditures gives the company a tremendous competitive advantage. Less quantifiable, but no less significant, is the impact Lean transformation has had on the LaserStar Learning Center, where more than 200 companies come each year to train on Crafford's products. The sales staff takes great pride in being able to bring new and existing customers, and customers are very impressed with how organized, efficient, clean, and bright this facility is. It is very different from many manufacturers, and this asset really helps strengthen the relationship with their customers.

Results:

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- * Increased business by 20 percent.
- * Increased efficiency with higher quality and shorter turn-around times.
- * Improved employee satisfaction.

Testimonial:

"RIMES is in the business of getting manufacturers to solve their own problems. They're different from other consultants in that they won't tell you what to do, and they won't do the work for you. My first comment to them was I don't want a consultant, and in fact, they aren't--I would call them "facilitators." RIMES knows manufacturing inside and out and provided us with the tools we needed to make the changes we wanted. They facilitated the process and were always there when we needed them; but in the end, they taught us how to tackle our own issues, now and in the future."

David Braman, Vice President of Engineering and Operations